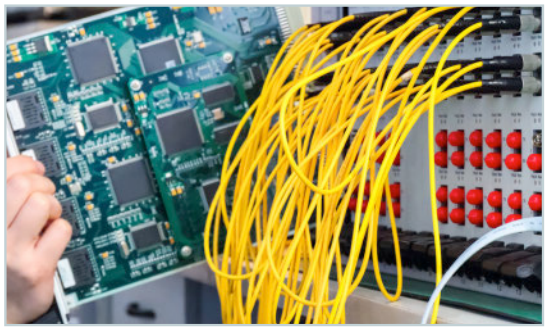
Scalable | Small Size, Low Profile | Power Sharing

Upgrade for Optical Packet Transport Rack

Field Upgradable Power

The Customer's Challenge

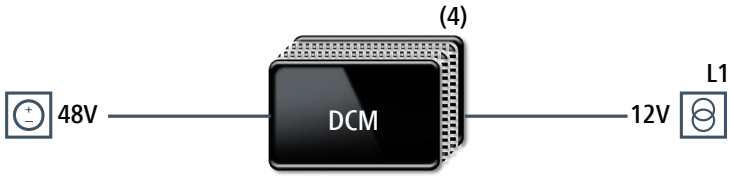
A manufacturer of optical transport equipment wanted to simplify the process of upgrading their systems for increased functionality when already installed in the field, as the down-time associated with returning units from the field was too costly. Populating equipment with a fully specified power supply to power a partly configured system was also an expensive option. Power requirements could range from 1.3kW to over 5kW, depending on system configuration.



The Solution

The customer developed a 48V to 12V, 1.28kW supply based on four DCM DC-DC converters. Power sharing amongst the converters was simple to implement by paralleling the outputs of the DCMs. This bulk supply was packaged in a convection-cooled housing that conducted heat from both the top and the bottom of the DCMs, so improving reliability, even when operating at high ambient temperatures.

Link to Whiteboard »



The Results

The array of DCMs achieved a power sharing of better than 5% between converters due to the unique built-in droop sharing scheme within the DCM converters themselves. A further benefit of the DCMs was that power-supply-to-power-supply power sharing could be achieved even when units were powered from different power sources. The final power supply was very compact, requiring a printed circuit board area of just 35cm^2 per 1.28kW supply.

Product Family Key Specifications	
DCM™ DC-DC Converter Module	
Input Voltages	9 – 50V_{DC}, 16 – 50V_{DC}, 18 – 36V_{DC}, 36 – 75V_{DC}, 120 – 420V_{DC}, 160 – 420V_{DC}, 200 – 420V_{DC}
Output Voltages	5V, 12V, 13.8V, 15V, 24V, 28V, 36V, 48V
Output Power	4623 ChiP: Up to 600W 3623 ChiP: Up to 320W
Efficiency	Up to 93%
Dimensions	4623 ChiP: 47.91 x 22.8 x 7.26mm 3623 ChiP: 38.72 x 22.8 x 7.26mm